

INTERNATIONAL SEARCH REPORT

International Application No

PCT/03/00049

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 25, 12 April 2001 (2001-04-12) & JP 2001 211666 A (ONKYO CORP), 3 August 2001 (2001-08-03) abstract	16,17
Y	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 11, 28 November 1997 (1997-11-28) & JP 09 191642 A (SANYO DENKI CO LTD), 22 July 1997 (1997-07-22) abstract	16,17
Y	US 5 442 540 A (HUA GUICHAO C ET AL) 15 August 1995 (1995-08-15) column 3, line 63 -column 4, line 20 figure 4	16,17
Y	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 03, 5 May 2003 (2003-05-05) & JP 2002 325458 A (SHINEI SANGYO KK), 8 November 2002 (2002-11-08) abstract	16,17
Y	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 04, 4 August 2002 (2002-08-04) & JP 2001 339944 A (NAGANO JAPAN RADIO CO), 7 December 2001 (2001-12-07) abstract	18,19
Y	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 15, 6 April 2001 (2001-04-06) & JP 2000 341947 A (MITSUBISHI ELECTRIC CORP), 8 December 2000 (2000-12-08) abstract	18,19
Y	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 10, 31 August 1999 (1999-08-31) & JP 11 146648 A (FUJI ELECTRIC CO LTD), 28 May 1999 (1999-05-28) abstract	18,19
Y	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 25, 12 April 2001 (2001-04-12) & JP 2001 238443 A (SUZUKI TOSHIYASU), 31 August 2001 (2001-08-31) abstract	21

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Information on patent family members

International Application No

PCT 03/00049

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5315498	A	24-05-1994	NONE	
US 5847589	A	08-12-1998	JP 9229012 A	02-09-1997
US 6191567	B1	20-02-2001	WO 0067366 A1 EP 1095445 A1 JP 2002543757 T	09-11-2000 02-05-2001 17-12-2002
JP 10080151	A	24-03-1998	JP 3141925 B2	07-03-2001
JP 07046853	A	14-02-1995	NONE	
EP 0425875	A	08-05-1991	US 5012139 A DE 69024608 D1 DE 69024608 T2 EP 0425875 A2 HK 1002240 A1 JP 3169112 A	30-04-1991 15-02-1996 01-08-1996 08-05-1991 07-08-1998 22-07-1991
US 6282111	B1	28-08-2001	NONE	
JP 2002320385	A	31-10-2002	NONE	
US 5986904	A	16-11-1999	NONE	
JP 11196580 5	A		NONE	
US 4353113	A	05-10-1982	CA 1169930 A1 DE 3111088 A1 FR 2478903 A1 GB 2075786 A , B	26-06-1984 21-01-1982 25-09-1981 18-11-1981
JP 2002272141	A	20-09-2002	NONE	
JP 2001211666	A	03-08-2001	NONE	
JP 09191642 6	A		NONE	
US 5442540	A	15-08-1995	US 5262930 A US 5418704 A	16-11-1993 23-05-1995
JP 2002325458	A	08-11-2002	NONE	
JP 2001339944	A	07-12-2001	JP 3377499 B2	17-02-2003
JP 2000341947	A	08-12-2000	NONE	
JP 11146648 7	A		NONE	
JP 2001238443	A	31-08-2001	NONE	

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H02M7/5387

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 315 498 A (BERRIOS MIGUEL A ET AL) 24 May 1994 (1994-05-24) column 2, line 34 - line 49 column 4, line 13 - line 17 figure 1	1-14, 16-19, 21,22
Y	US 5 847 589 A (KUKI HIROYUKI ET AL) 8 December 1998 (1998-12-08) abstract column 2, line 29 - line 54	1-3,6,7, 11,22
Y	US 6 191 567 B1 (SLUIJS FERDINAND JACOB) 20 February 2001 (2001-02-20) column 1, line 36 - column 4, line 45 column 4, line 56 - column 5, line 25 -/-	1-3,6,7, 11,22

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 08, 30 June 1998 (1998-06-30) & JP 10 080151 A (SANKEN ELECTRIC CO LTD), 24 March 1998 (1998-03-24) abstract	4,5
Y	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 05, 30 June 1995 (1995-06-30) & JP 07 046853 A (TOSHIBA CORP), 14 February 1995 (1995-02-14) abstract	4,5
Y	EP 0 425 875 A (MOTOROLA INC) 8 May 1991 (1991-05-08) column 3, line 24 - line 42 figure 2	8,9
Y	US 6 282 111 B1 (ILLINGWORTH LEWIS) 28 August 2001 (2001-08-28) column 2, line 50 - line 59 figure 2	10
Y	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 02, 5 February 2003 (2003-02-05) & JP 2002 320385 A (YOKOGAWA ELECTRIC CORP), 31 October 2002 (2002-10-31) abstract	12-14
Y	US 5 986 904 A (JACOBS MARK ELLIOTT ET AL) 16 November 1999 (1999-11-16) abstract figure 1	12-14
Y	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 12, 29 October 1999 (1999-10-29) & JP 11 196580 A (TOKO INC), 21 July 1999 (1999-07-21) abstract	12-14
Y	US 4 353 113 A (BILLINGS KEITH H) 5 October 1982 (1982-10-05) abstract figure 1	16-19
Y	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 01, 14 January 2003 (2003-01-14) & JP 2002 272141 A (HITACHI METALS LTD; HITACHI FERRITE ELECTRONICS LTD), 20 September 2002 (2002-09-20) abstract	16,17
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